



LIFE21-NAT-IT-LIFE  
GOPROFOR MED  
101074738

# PRESERVING AND MANAGING FOREST HABITATS IN THE MEDITERRANEAN AREA

WORKSHOP - MONDAY DECEMBER 4, 2023



Co-funded by  
the European Union



## Adaptation of IBP to Greece and Spain (WP 2 – Task 2.4)



Generalitat de Catalunya  
Departament d'Agricultura,  
Ramaderia, Pesca i Alimentació



Centre de la Propietat  
Forestal



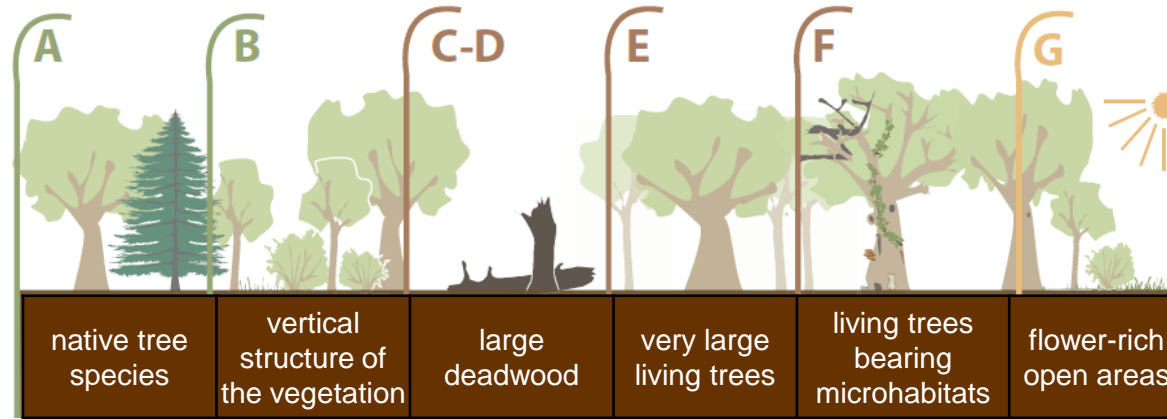
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<sup>3</sup>CPF

<sup>4</sup>EKBY, <sup>5</sup>MINISTRY OF ENVIRONMENT AND ENERGY -  
FORESTRY SERVICE OF THESSALONIKI

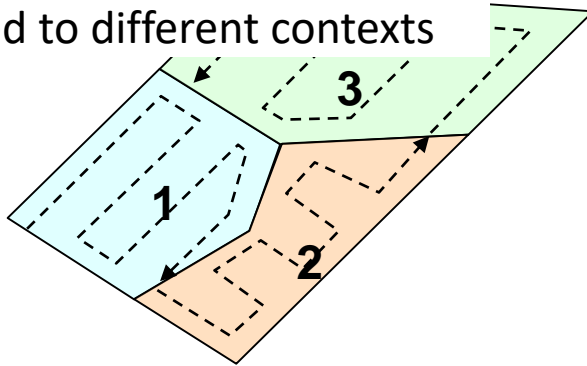
# IBP for estimating the potential of forest stands for biodiversity

7 factors directly related to management

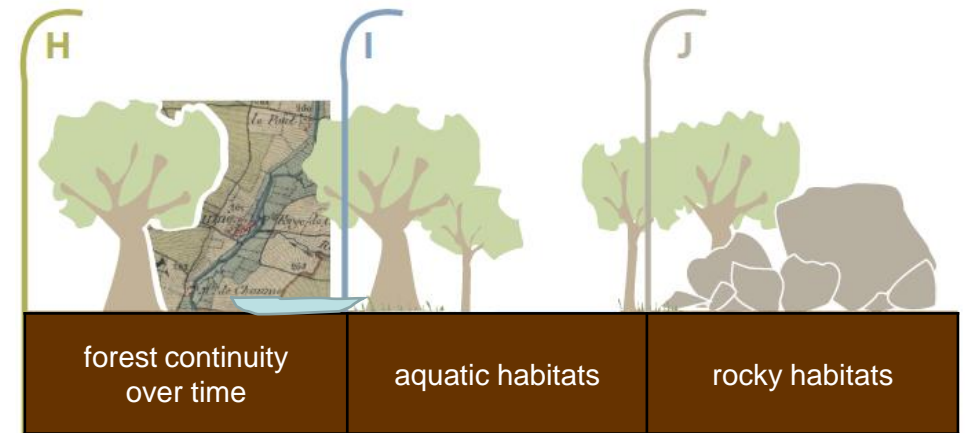


Indirect & composite indicator

Survey methods: standardized & adapted to different contexts



3 factors rather concerning the context



**IBP** = capacity of forest stands to support common taxonomic biodiversity

# Origin & extension of IBP

v1.0

v3.0

2008

2018

2022-2023

2028


**France:** creation + R&D program (Larrieu & Gonin, 2008)


Life **GoProFor (Italy)** & Life **Biorgest (Catalonia)**




Life **GoProFor Med (France, Italy, Greece, Spain)**

A new project 2024-2026: StrategyMedFor

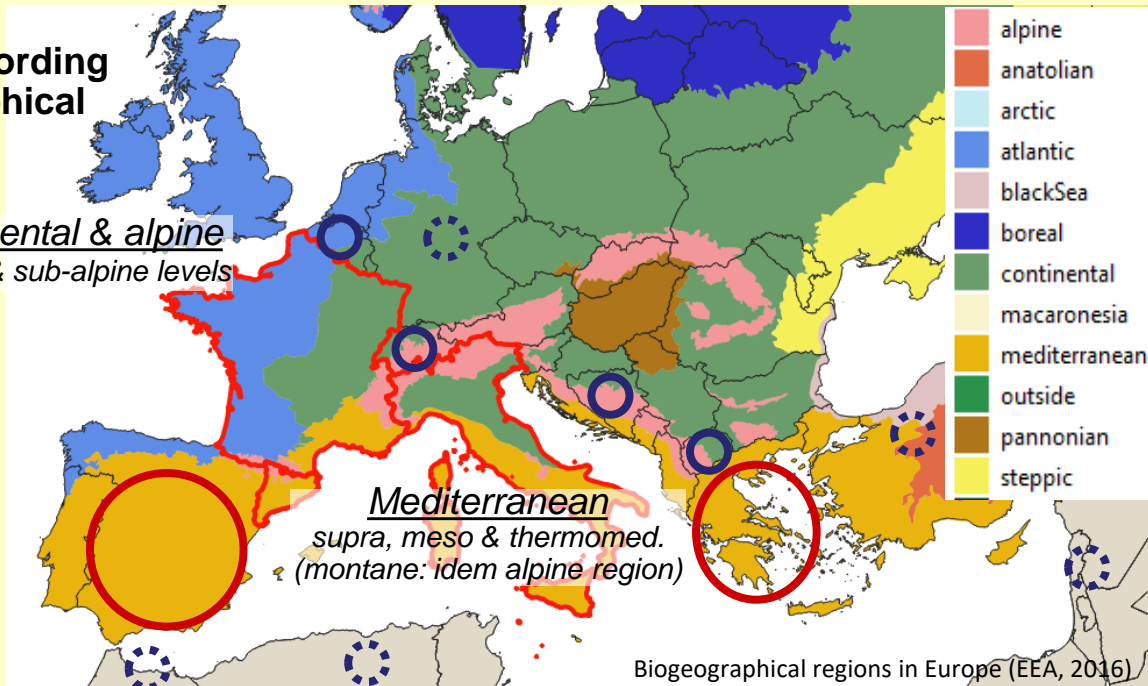
 IBP: domain of validity with IBP v3.0 in 2023

 New IBP version in progress  
 in **Greece & Spain**  
 in other countries

 IBP tests or test projects

2 IBP versions according to the biogeographical regions

Atlantic, continental & alpine  
 lowland, montane & sub-alpine levels



A method to **extend** and **harmonize the IBP definition** according to the IBP specifications (Gonin *et al.*, 2017)

An **International Committee of Experts (ICE)** of the IBP

## Main focus

- 2 factors to adapt to each country: A and H
- Definition of area of use of the 2 versions



# Adaptation of factor A “Native tree species”

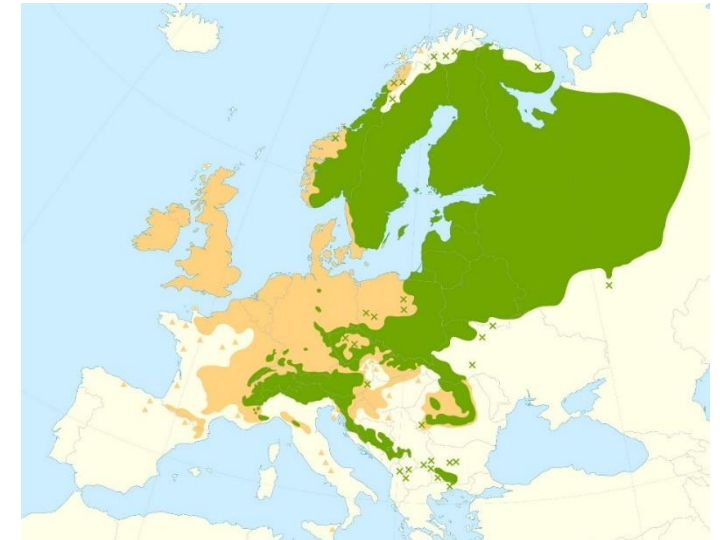
- **Definition used in IBP**

- **native tree species** = present in its natural area, without introduction by humans  
+ **archaeophytes** = introduced before 1500, e.g. *Castanea sativa*, *Cupressus sempervirens*, *Juglans regia*, *Pinus pinea*
- Maps of natural area: **EUFORGEN & European Atlas of Forest Tree Species (EAT) & Chorological** (Joint Research Centre, EC)

Main tree species in these documents:  
**88 tree species & 34 tree genera**  
under IBP definition

English: Distribution map of *Picea abies* (Norway spruce).

- × Native range and isolated population
- ▲ Introduced and naturalized (synanthropic) range and isolated population



- **Greece**

1. In EUFORGEN, EAT & Chorological: the **number & the list of native tree genera** under IBP definition for Greece and France are **similar** (*Larix* non-native in Greece; *Aesculus*, *Phoenix* and *Platanus* non-native in France)

	Number of tree species & tree genera under <b>IBP definition</b> described in <b>EUFORGEN, EAT &amp; Chorological</b>		
	Total	In France	In Greece
tree species	88	57	59
<b>tree genera</b>	34	28	30

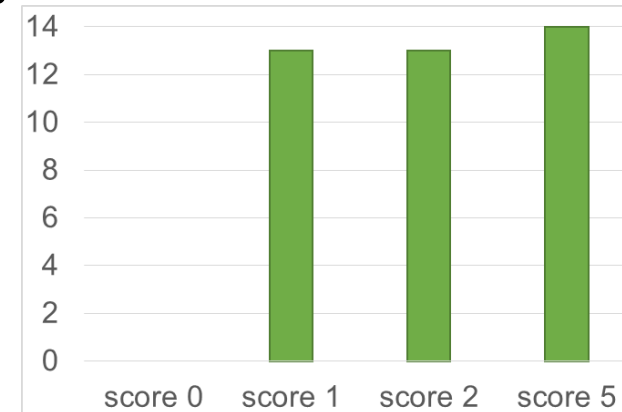
2. All the Greek tree taxa are not described in EUFORGEN, EAT & Chorological: **41 tree genera** in Greece and about 141 taxa according to Korakis, 2015 (Forest Botany, Native trees and shrubs of Greece)

→ check whether the new genera are trees as defined by IBP

3. An **important diversity** of tree species found during the IBP test (40 surveys)

Number of IBP surveys per score of factor A in Greek surveys (total 40)

*The distribution of surveys is balanced, except for score 0 which was deliberately under-sampled*



→ the thresholds used in the French definition should be relevant

- **Spain:** in progress

# Adaptation of factor H “Forest continuity over time”

- **Definition**

- **ancient forest** = never been cleared since a **reference date** which is the minimum forest coverage or a date before

- **Greece**

- **reference date** = date of the minimum forest coverage = approximately **1<sup>st</sup> half of the 20<sup>th</sup> century**, with variations according to the region

(increase in forest area due to the 2nd World War & Grek Civil War + abandonment of agricultural & urbanisation in the 1950s-1960s)

- **documents:**

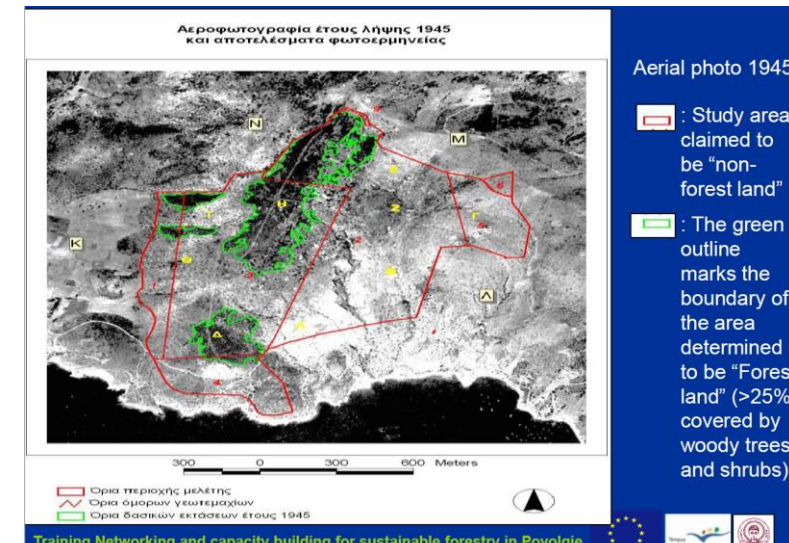
**1945** aerial photo → check no planting before  
**Management plan**

**Forest history** knowledge and documents

*Example of 1945 aerial photo (Mouflis et al. 2007)*

Aerial photo available on internet:

<http://gis.ktimanet.gr/wms/ktbasemap/default.aspx>



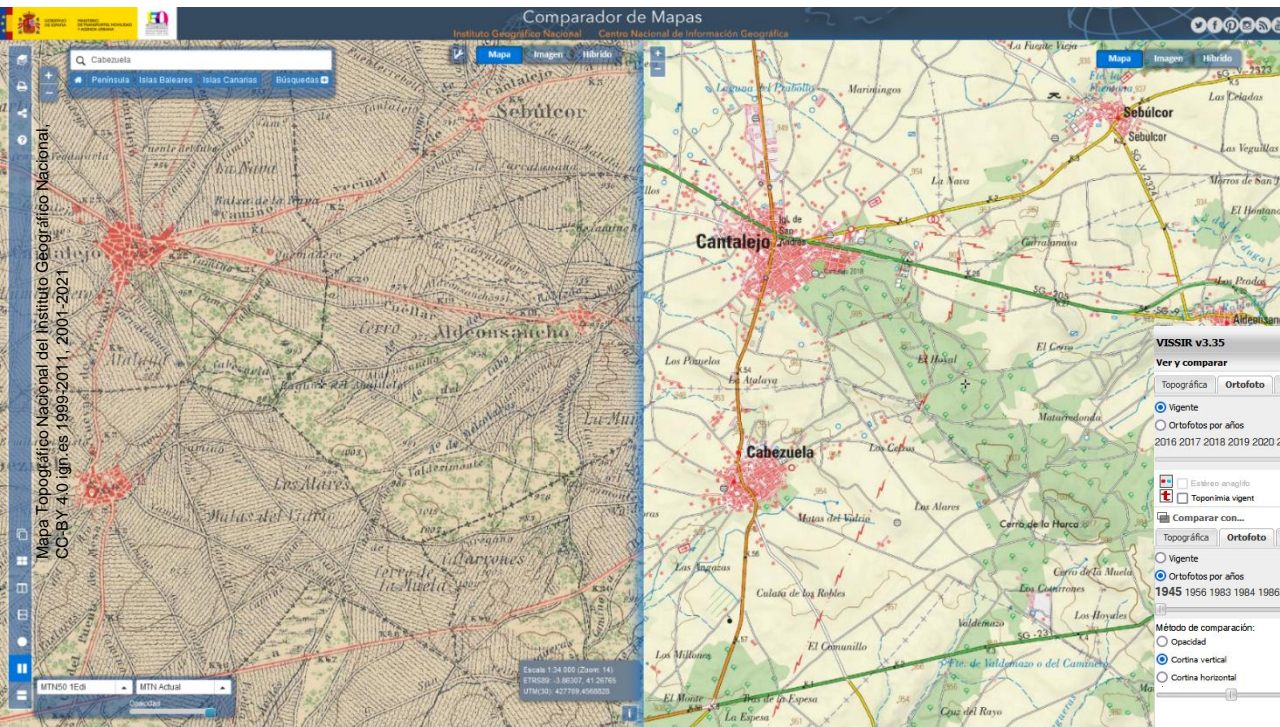
- **Spain**

- **reference date** = date of the minimum forest coverage  
= **1<sup>st</sup> half of the 20<sup>th</sup> century**, with variations according to the region  
(increase in forest area due to plantation programs started in the 1900s +  
abandonment of agricultural that increased in the 1940-50s)
- **documents:**
  - **Topographic maps:** the oldest published between **1876 and 1965** (1:50,000 Mapa Topográfico Nacional, **MTN50**)
  - **Aerial photos:** the oldest are those of the United States Army Map Service (AMS), taken in **1945-46 (Series A)** and **1956-57 (Series B)**
  - Coverage that is not always complete



# Examples of document at national and regional level

Comparison of old and recent topographic maps on the website of the Spanish National Geographic Institute



Mapa Topográfico Nacional

1:50.000 (MTN50) - 1940

actual

Comparison of old and recent aerial photographs on the website of the Institut Cartogràfic i Geològic de Catalunya



top: photo 1945, bottom: photo 2022



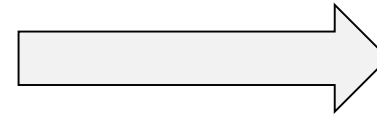
# Domain of use of the 2 IBP versions

- 2 versions?

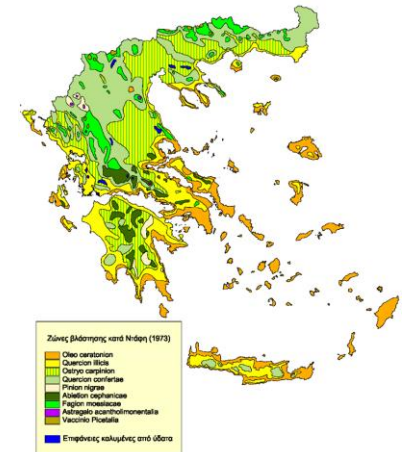
- some thresholds used trees dimension and are affected by environmental conditions
- Currently 2 versions: **Mediterranean vs Atlantic/Continental/Alpine**  
+ difference for **very low fertility conditions** in each one

- Issues for Greece

identify easily the biogeographical levels



Biogeographical regions are more complex than in EEA map



Growth conditions are similar in montane of Mediterranean and Alpine region  
Some forests in supramediterranean level have growth similar to that of the montane level

- These issues are similar in other countries

## Solution: change the definition of area of use of the 2 IBP versions, without changing the IBP definition

### Proposal of new key to be discussed with partners and ICE

**VERY LOW FERTILITY CONDITION**  
(e.g. rocky slopes, south-exposed...)



**Low thresholds** for DBH  
(living & deadwood)

**OTHER FERTILITY CONDITIONS**

. Strong **constraints due to macroclimatic** conditions  
(several dry months... thermomed., mesomed, lower  
part of supramed. ?)



**Medium thresholds** for DBH (living & deadwood) & height

. Low constraints due to macroclimatic conditions  
super part of supramed. ?, montane



**High thresholds** for DBH (living & deadwood) & height

subalpine



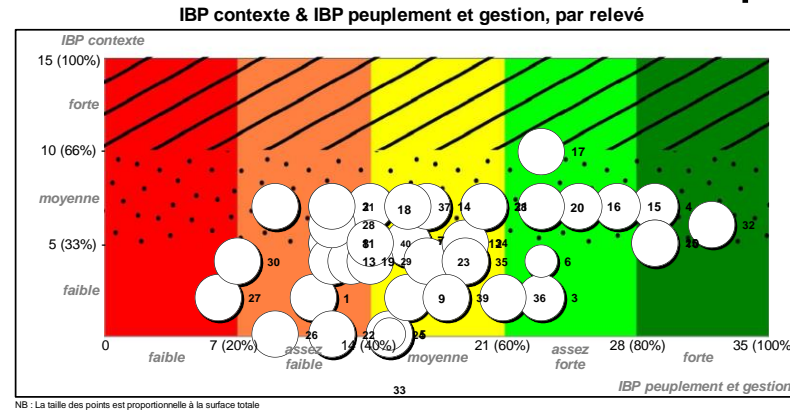
**High thresholds** for DBH & height  
Low nb of tree sp & uncapped openness

# Test of the IBP v3.0

- **Greece**

- 40 IBP surveys throughout Greece (except in Crete), in forests representative of the Greek vegetation diversity, from thermomediterranean to subalpine level

40 IBP tests 2022-2023



wide range  
of IBP scores



- The IBP definition matches with the Greek context & thresholds are relevant
- Some issues to be checked:
  - list of native tree genera
  - thresholds of high layer (factor B): 20 → 18 m / 15 → 13 m ?
  - lower limit of the subalpine level, used in factors A & G

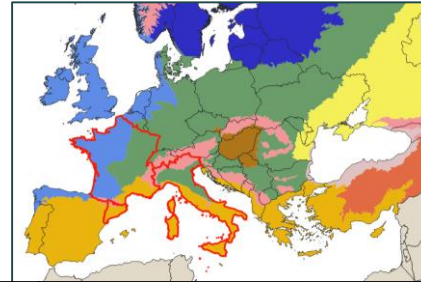
- **Spain:** test planned in 2024

- IBP version v3.0 already adapted to Catalonia



# IBP documentation

CNPF, CPF & WSL production with partner support  
 As part of GoProPor Med, GoProPor, Biorgest projects, and French R&D programm



<b>2 TYPES OF DOCUMENT</b>	<b>Version according to the area of use</b>	<b>Languages</b> (not all documents are in the languages specified)	<b>Template</b>
1 - Documents for carrying out IBP surveys	<b>Version adapted to each region</b> for: IBP definition IBP survey sheets Regional version of the method	<b>According to the region</b> , in Catalan, French, Italian, Spanish	CPF & CNPF template
		<b>A standard version</b> for Europe and the Mediterranean Basin: English, French	CNPF standard template
	A <b>unique version</b> for Europe and the Mediterranean Basin for: IBP typologies Methods Excel® spreadsheet Field Guide to Tree-related Microhabitats	Catalan, English, French, Italian, Spanish	CNPF standard template  WLS standard template
2 - IBP educational documents	<b>Initially:</b> versions adapted to each region	Catalan, French, Italian, Spanish	CNPF standard template
	<b>Now:</b> a unique version for Europe and the Mediterranean Basin	English, French, Italian, Spanish	







# 1 - DOCUMENTS FOR CARRYING OUT IBP SURVEYS

## 1.3 - IBP survey methods

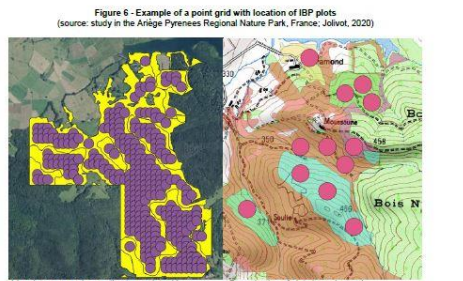
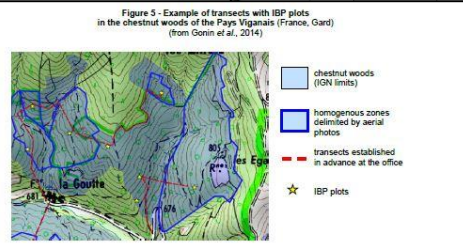
**Protocol d'aplicació de l'Índex de Biodiversitat Potencial (IBP)**

Aquest document presenta el protocol pel disseny d'inventari i la recollida de dades pel càlcul de l'IBP. La descripció de l'IBP i altres documents d'interès per la seva aplicació es poden consultar a: [http://cpf.gencat.cat/ca/cpf\\_03\\_linies\\_actuacio/cpf\\_transferencia\\_coneixement/Index-Biodiversitat-Potencial/](http://cpf.gencat.cat/ca/cpf_03_linies_actuacio/cpf_transferencia_coneixement/Index-Biodiversitat-Potencial/)

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1. Disseny de l'inventari
  - 1.1 Tria del tipus d'inventari IBP segons objectiu
  - 1.2 Tria del mètode de mostreig
    - 1.2.1 Transecte lineal
    - 1.2.2 Parcel·les circulars (o rectangulars)
2. Protocol de presa de dades a camp pel càlcul de l'IBP
  - 2.1 La recollida de dades
  - 2.2 Com s'organitzen les dades
  - 2.3 Com m'organitzen les dades
3. Tipus de dades
  - 3.1 Inventari
    - 3.1.1 Previsió de la metodologia
    - 3.1.2 Característiques de les parcel·les
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    - 3.1.98 Característiques de les parcel·les
    - 3.1.99 Mètodes de mostreig
    - 3.1.100 Efectes de les parcel·les

Languages				
ca	en	es	fr	it
Area of use				
Catalonia	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin
Content: text for Catalonia, with a CPF template		Content: identical text translated into several languages, with a CNPF standard template		
Format: electronic document				



Característiques	Disseny	Intensitat	Complementàries	Amplada total?¹
is fins a 2 ha, o quan un treig parcial suposaria observar > 50 % de la superfície	Mostreig complet	Tot el rodal	No	Si
rodals fins a 15-20 ha	Mostreig parcial	Minim 1ha i 10% de la superfície del rodal, si és molt homogeni, o 20% si és molt heterogeni	Si (factors A, G, I i J)	1 inventari: Si Varis inventaris: No
is de 20-40 ha on volem diagnòstic ràpid no essencialment exhaustiu	Mostreig dirigit	5-8 inventaris totals, o per estrat homogeni (parcel·les/transectes d'1ha preferiblement)	No	Si
is a la rodalització (si ja odalitzada es caracteriza da rodal per separat)	Mostreig dirigit	Minim 10% de la superfície total (parcel·les de 0,2ha o 0,33 ha)	No	No
és quan ja hi ha previst inventari dasonomètric sistemàtic	Mostreig sistemàtic	5-8 inventaris per estrat¹ (parcel·les/transectes d'1ha preferiblement)	No	Si
isi a escala de massis o d'una tipologia de bosc habitat (per ex. l'alzinar i un espai natural)	Mostreig dirigit			






The number of plots depends on the area of the stand type:

- stand type less than 40 ha: the area sampled must be at least 1 ha and represent 10 to 20% of the area assessed: 10% for very homogeneous stands such as pure plantations, 20% for heterogeneous stands such as irregular mature mixed forest.
- stand type exceeding 40 ha: carry out IBP surveys on at least 5 to 8 plots of 1 ha each (or equivalent area). Their number should be appropriate for the heterogeneity and extent of the stand type. However, the number of plots depends on sampling difficulties related to the area, shape and location of the stand types.

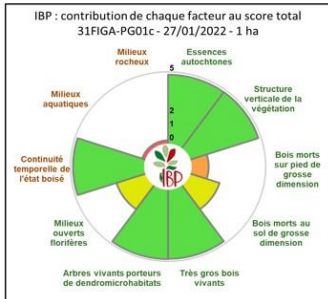
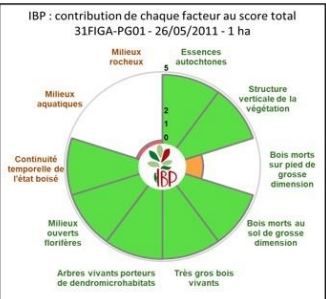
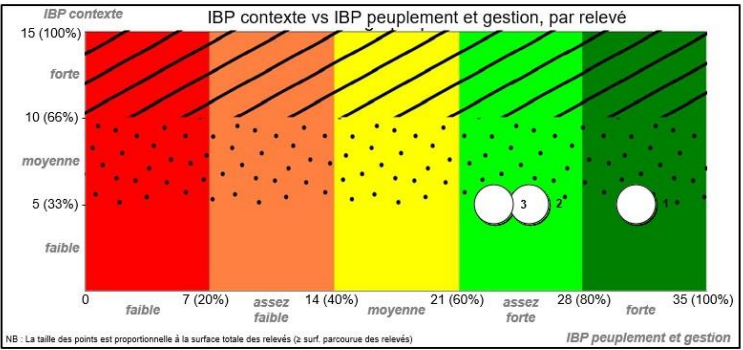
# 1 - DOCUMENTS FOR CARRYING OUT IBP SURVEYS


## 1.4 - IBP Excel® spreadsheet

store IBP data to facilitate temporal monitoring  
calculate the IBP score of a survey or a group of plots  
graph the results and compare data from several stands

Languages				
 NV <b>ca</b>	 ND <b>en</b>	 NV <b>es</b>	 NV <b>fr</b>	 NV <b>it</b>
Area of use				
temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin
<b>Content:</b> Excel spreadsheet for archiving data and reporting results in a standardised format, in several languages				
<b>Format:</b> electronic spreadsheet				

Indice de Biodiversité Potentielle (IBP)																					
formation - Occitanie																					
Caractéristiques du relevé		IBP : facteurs liés au peuplement et à la gestion forestière							IBP : facteurs liés au contexte				IBP total								
Nom du relevé	Date (jj/mm/aa)	Surface totale (ha)	Surface parcourue (%)	A	B	D	E	F	G	Total	H	I	J	Total	Total						
31FIGA-PG01	26/05/11	1,00	1,00	5	5	1	5	5	5	31	33%	forte	5	0	0	5	33%	faible	36	72%	assez forte
31FIGA-PG01c	27/01/22	1,00	1,00	5	5	1	2	5	5	25	71%	assez forte	5	0	0	5	33%	faible	30	60%	moyenne
31FIGA-PG1b	26/05/11	1,00	1,00	5	5	1	2	5	5	23	66%	forte	5	0	0	5	33%	faible	28	56%	moyenne





### WELCOME TO THE IBP DATABASE

User ID (= email address)

First name

Last name

Organization

It is advisable to fill in these informations which are stored in your file. They are used to identify your file and secure your file exchanges.

Remember to rename your file, eg. by adding a short identifier to the initial name (Ex: IBP\_BD\_21.xlsm --> IBP\_BD\_21\_PG.xlsm). Current name:  
**IBP BD v231001.t1.xlsm**

5 languages:  
Catalan, English,  
French, Italian,  
Spanish

→ a database for the project

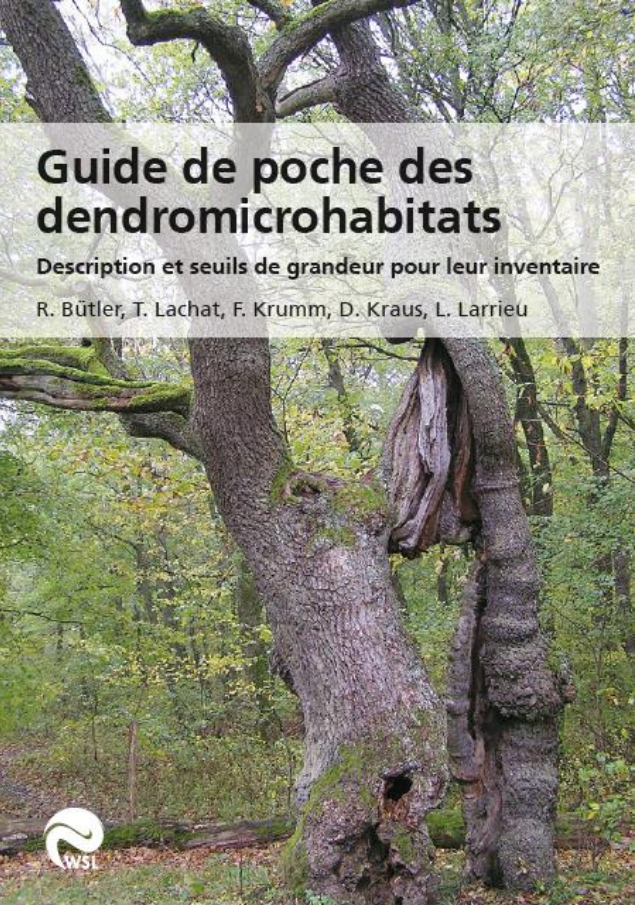
If you would like to contribute to the international database of IBP surveys, please send your file to [fr.pierre.copin@cnff.fr](mailto:fr.pierre.copin@cnff.fr).








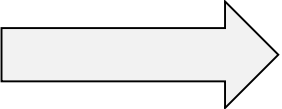
# 1 - DOCUMENTS FOR CARRYING OUT IBP SURVEYS

ND: new document  
 NV: new version  
 in 2023

## 1.5 - Field Guide to Tree-related Microhabitats (WSL documentation)



Languages				
 NV <b>ca</b>	 <b>en</b>	 NV <b>es</b>	 <b>fr</b>	 <b>it</b>
Area of use				
temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin	temperate Europe and Mediterranean Basin
<b>Content:</b> document with identical text translated into several languages, WSL standard template				
<b>Format:</b> electronic document				

  
 CPF translation

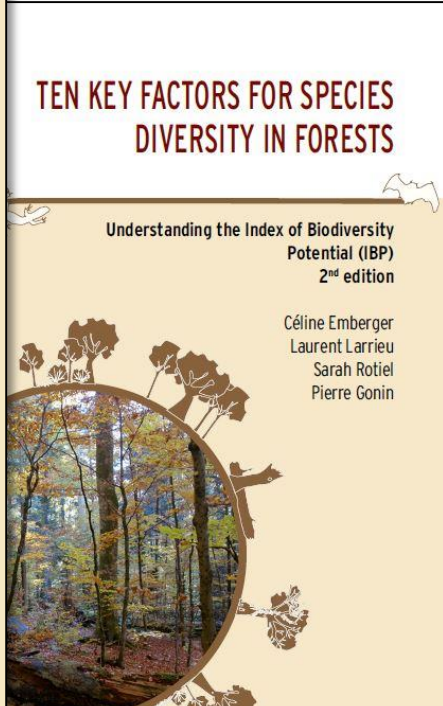
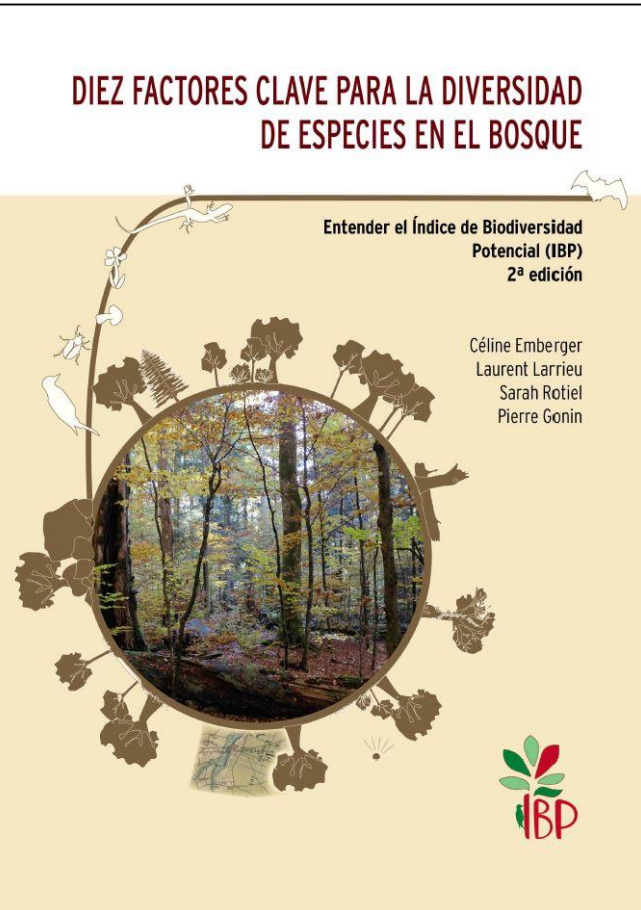




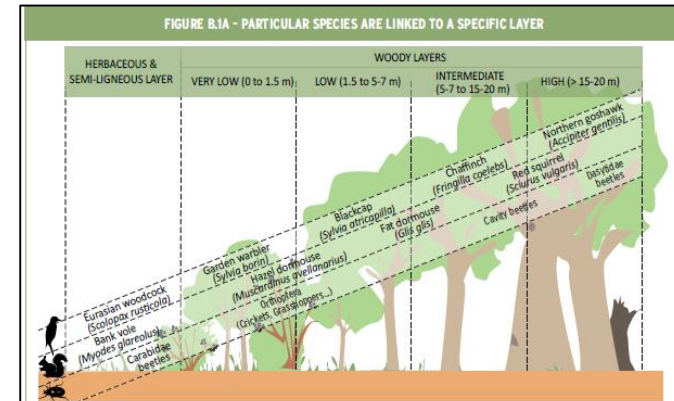
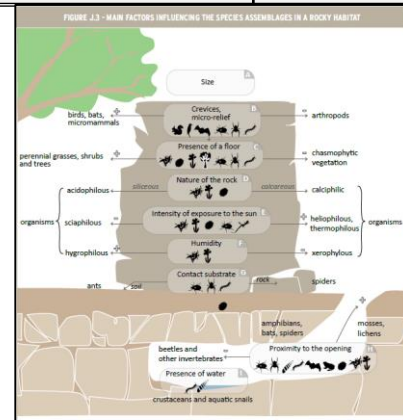
# 2 - IBP EDUCATIONAL DOCUMENTS

## 2.1 - "Ten key factors for species diversity in forests. Understanding the IBP", 62 p.

Target audience: professionals








Languages				
ca	en	es	fr	it
	<b>Content:</b> 2 <sup>nd</sup> edition with text adapted for readers in Europe and the Mediterranean Basin	<b>Content:</b> 2 <sup>nd</sup> edition with text adapted for readers in Europe and the Mediterranean Basin	<b>Content:</b> 1 <sup>st</sup> edition with text for French readers	<b>Content:</b> 2 <sup>nd</sup> edition with text for Italian readers
	<b>Format:</b> electronic document (2023)	<b>Format:</b> electronic document (2023)	<b>Format:</b> printed document edited by the CNPF (2016)	<b>Format:</b> 1 <sup>st</sup> edition printed & edited by the CNPF (2019) 2 <sup>nd</sup> edition: electronic document (2023)

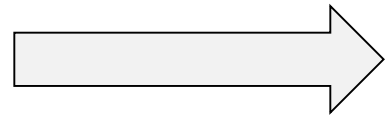
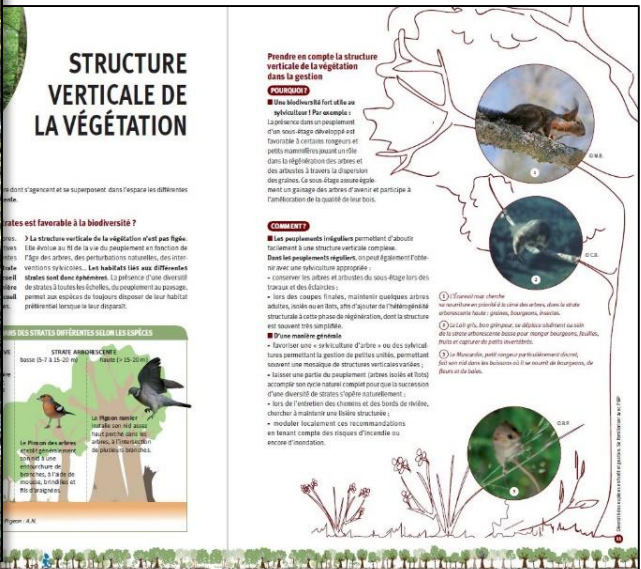
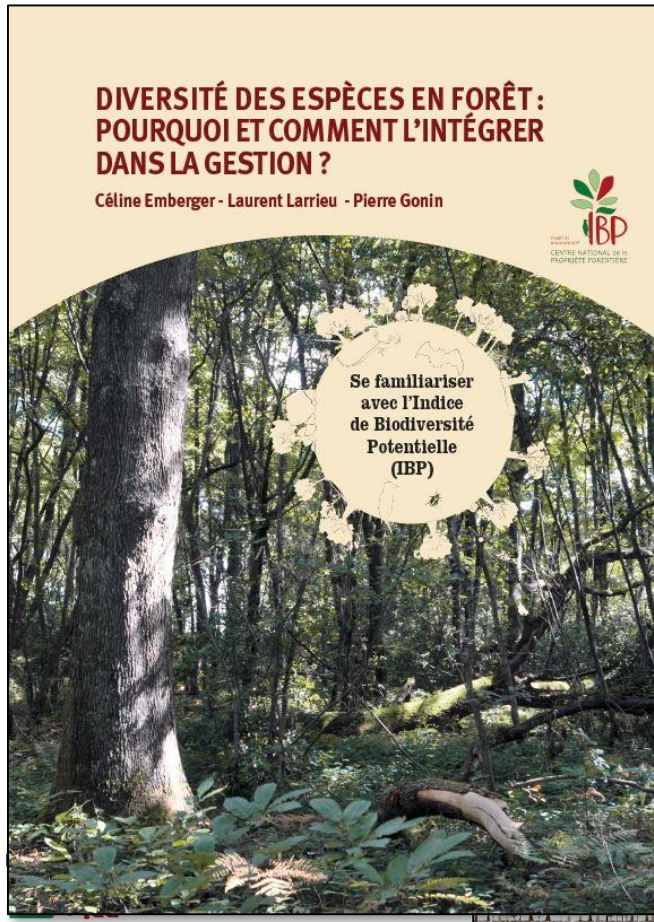


## 2 - IBP EDUCATIONAL DOCUMENTS

### 2.2 - "Species diversity in forests: why and how integrate it into management? Familiarise yourself with the IBP", 28 p.

Target audience: forest owners

Languages				
 ca	 en	 es	 fr	 it
<b>Content:</b> 2nd edition with text adapted for readers in Catalonia and Spain (CPF)			<b>Content:</b> 1 <sup>st</sup> edition with text for French readers	
<b>Format:</b> electronic document (2023)			<b>Format:</b> printed document edited by the CNPF (2014)	



CPF translation & model





# 2 - IBP EDUCATIONAL DOCUMENTS

ND: new document  
NV: new version  
in 2023

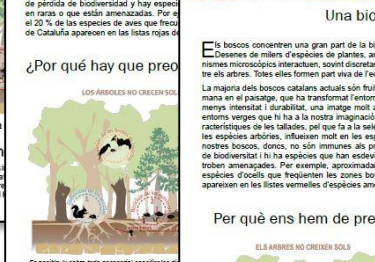
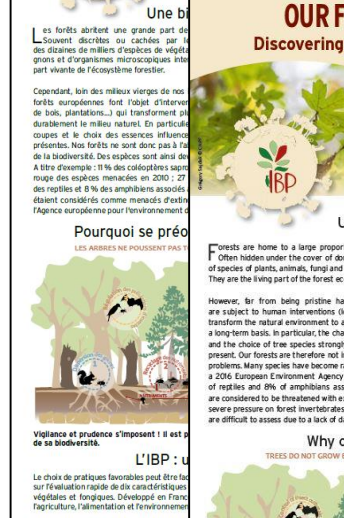
## 2.3 - "Our forests are full of life! Discovering the IBP", 4 p.

Target audience: forest owners & general public

Languages				
ca	en	es	tr	It
<b>Content:</b> text adapted for readers in Catalonia and Spain (2020, CPF)	<b>Content:</b> text updated from French document and adapted for readers in Europe and the Mediterranean Basin (2023)	<b>Content:</b> text adapted for readers in Catalonia and Spain (2020, CPF)	<b>Content:</b> text updated from French document and adapted for readers in Europe and the Mediterranean Basin (2023)	<b>Content:</b> text updated from French document and adapted for readers in Europe and the Mediterranean Basin (2023)
<b>Format:</b> electronic + printed document (except fr)				



ND: translation into Greek in review





# Conclusion: actions planned in 2024

- **Change in the application domain of the 2 IBP versions**
- **Greece**
  - Finish the IBP Greek version
  - Drafting of documents adapted to Greece from the European IBP version and the bibliographic analysis
  - Translation of documents into Greek.
- **Spain**
  - Test the IBP in other regions of Spain than Catalonia
  - Finalize the definition for Spain.
- **International Committee of Experts of IBP: meeting to discuss the new IBP versions et validate them**





**Thanks for your attention...**